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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,183	04/13/2004	Philippe Lafon	TI-37335 (1962-11200)	3722
23494	7590	01/12/2007	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			AMIN, JWALANT B	
			ART UNIT	PAPER NUMBER
			2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/823,183	LAFON, PHILIPPE	
	Examiner	Art Unit	
	Jwalant Amin	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 04 August 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17, 22-27 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-17 and 22-27 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's election with traverse of Group II, claims 12-17 and 22-27, in the reply filed on 08/04/2006 is acknowledged. The traversal is on the ground(s) that the search of Group II overlaps with the search that may be required with respect to Group I (see pg. 10 lines 4-6 of Applicant's remarks). This is found persuasive.
2. The examiner withdraws the restriction requirement between claims in Group I (claims 1-11) and Group II (claims 12-17 and 22-27), and will now consider claims 1-17 and 22-27 as part of the elected Group II.
3. Applicant's arguments with respect to claims 12-17 and 22-27 have been considered but are moot in view of the new ground(s) of rejection.
4. Regarding claims 12 and 22, the Applicant argues that Horton fails to expressly or inherently teach a system "... wherein the processor, executing a program, overlays a digital graphics object and a digital picture based on a weight factor" (see pg. 11 first paragraph of Applicant's remarks).

However the examiner interprets that MacInnis, in view of Horton, teaches an alpha value (weight factor) included in YUV format dependent on keying (chroma or luma) and luma, which is used to blend (overlay) a top-layer and a bottom-layer (col. 7 lines 38-41, col. 9 lines 37-40, col. 16 lines 43-46, col. 46 lines 45-56, col. 111 lines 65-67, col. 112 lines 1-53, col. 120 lines 13-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to use alpha values in blending two graphics layer as taught by MacInnis into the system of Horton because

alpha value is applied to the whole window to support special features such as fade-in or fade-out of a window (col. 120 lines 28-31).

Election/Restrictions

5. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. No claims – now combined into Group II.
 - II. Claims 1-17 and 22-27, drawn to a method and system that performs generic overlay of digital data, classified in class 345, subclass 629.
 - III. Claims 18-21, drawn to a method of blending by adjusting chrominance of compressed data, classified in class 345, subclass 640.
 - IV. Claims 28-30, drawn to a medium of compression by combining chrominance values, classified in class 345, subclass 639.
6. The inventions are distinct, each from the other because of the following reasons:

Inventions II and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus of group II as claimed can be used to practice another and materially different process such as that of group I for combining digital graphics object and digital picture while in compressed format.

Inventions II and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed

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does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention II is drawn to a system that performs generic overlay of digital data, and invention IV is drawn to a medium for compression by combining chrominance values. The combination is direction to the overall system of combining digital data without specific features required by the systems in each subcombination.

Inventions III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are clearly defined in the specification as different embodiments having different modes of operation and different functions (see pages 4-5). The claim language further supports the differentiation of their embodiments.

7. Because these inventions are distinct for the reasons given above and the search required for each individual group II-IV is not required for the other individual groups II-IV as explained above, restriction for examination purposes as indicated is proper.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

1. Regarding claim 1, the language of the claim raises questions as to whether the claim is directed merely to a functional descriptive material that shows no practical application which produces concrete, tangible and useful result to form the basis of statutory subject matter under 35 U.S.C. 101. Specifically, the method of combining a digital graphics object and a digital picture while both the digital graphics object and the digital picture are in a compressed format as disclosed in claim 1 is an abstract idea, which would be implemented without use of any type of machine. See MPEP 2106 IV (B)(1).

2. Claims 2-11 are dependent on claim 1, and therefore the examiner gives the same reasons as stated above.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-2, 6, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Horton (US 5,969,770).

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12. Regarding claim 1, Horton (Fig. 1, col. 2 lines 35-43 and lines 55-67, col. 3 lines 29-32, col. 5 lines 15-17, col. 7 lines 12-17, lines 49-58, col. 8 lines 4-8 and lines 32-35) teaches a processor (microprocessor) based method comprising combining (superimpose/overlay) a digital graphics object (OSD graphics/graphics image) and a digital picture (digital video signal/video image) while each of the digital graphics object and the digital picture are in compressed format (4:2:2 format).

13. Regarding claim 2, Horton teaches compressing the digital graphics object (OSD graphics) to be in the compressed format (4:2:2 format) (col. 7 lines 49-67 and col. 8 lines 1-8).

14. Regarding claim 6, Horton teaches to compress the digital graphics object in 4:4:4 space to one of 4:2:2 space or 4:2:0 space (col. 7 lines 49-67 and col. 8 lines 1-8).

15. Regarding claim 10, Horton teaches combining while both the digital graphics object and the digital picture are in a 4:2:2 space format (col. 7 lines 12-17, lines 49-54, lines 57-58, col. 8 lines 4-8, lines 32-35).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horton.

18. Regarding claim 11, Horton teaches combining the digital graphics object and the digital picture (col. 7 lines 12-17, lines 49-54, lines 57-58, col. 8 lines 4-8, lines 32-35). Horton does not explicitly teach that the digital graphics object and the digital picture are in 4:2:0 space format. However, Horton teaches 4:2:0 space format (col. 7 lines 17-22). Horton also teaches the graphic image sequence and video image sequence needs to be in the same format to insert a graphics image into a video image (col. 7 line 67, col. 8 lines 1-3; graphic image sequence corresponds to digital graphics object; video image corresponds to digital picture; insert corresponds to overlay). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have the digital graphics object and the digital picture in compressed format 4:2:0, instead of 4:2:2 compressed format as taught by Horton. Applicant has not disclosed that using 4:2:0 compressed format provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with 4:2:2 compressed format of Horton because the processor workload for processing compressed digital data is significantly lower than that required for processing the same data in uncompressed form, and thus resulting in a better processor performance. Therefore, it would have been obvious to one of ordinary skill in this art to modify the compression format used by Horton to obtain the invention as specified in claim 17.

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19. Claims 3-4, 7-9, 12, 16 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horton (US 5,969,770), and further in view of MacInnis et al. (US 6,853,385 B1; hereinafter referred to as MacInnis).

20. Regarding claim 12, Horton (Fig. 1, col. 2 lines 35-43 and lines 55-67, col. 3 lines 29-32, col. 5 lines 15-17, col. 7 lines 12-17, lines 49-58, col. 8 lines 4-8 and lines 32-35) teaches a system (digital satellite television system) comprising a processor (microprocessor), a memory coupled to the processor ("read-only" memory (ROM)), and the processor executing a program (in response to a control program) overlaying (superimpose/overlay) a digital graphics object (OSD graphics/graphics image) and a digital picture (digital video signal/video image) while each of the digital graphics object and the digital picture are in compressed format (4:2:2 format).

Although Horton discloses the claimed limitations as stated above, Horton does not explicitly teach that the overlaying is based on a weight factor. However, MacInnis teaches an alpha value (weight factor) included in YUV format dependent on keying (chroma or luma) and luma, which is used to blend (overlay) a top-layer and a bottom-layer (col. 7 lines 38-41, col. 9 lines 37-40, col. 16 lines 43-46, col. 46 lines 45-56, col. 111 lines 65-67, col. 112 lines 1-53, col. 120 lines 13-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to use alpha values in blending two graphics layer as taught by MacInnis into the system of Horton because alpha value is applied to the whole window to support special features such as fade-in or fade-out of a window (col. 120 lines 28-31).

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21. Regarding claim 16, Horton teaches the processor (microprocessor, Fig. 1, col. 5 lines 15-17) executing the program overlays the digital graphics object and the digital picture while each of the digital graphics object and the digital picture are in a 4:2:2 space format (col. 7 lines 12-17, lines 49-54, lines 57-58, col. 8 lines 4-8, lines 32-35).

22. Regarding claim 22, Horton teaches a computer readable media ("read-only" memory (ROM)) storing a program (control program) (Fig. 1, col. 5 lines 15-17) that when executed by a processor, performs a method comprising overlaying a graphics object onto a picture while both the graphics object and the picture are in a compressed format (col. 7 lines 12-17, lines 49-54, lines 57-58, col. 8 lines 4-8, lines 32-35). For further details, refer to the rejection of claim 12.

23. Regarding claim 23, Horton discloses all of the claimed limitations as stated above, except that Horton does not explicitly teach overlaying comprises overlaying a chrominance value in the graphics object with a chrominance value onto the picture based on the weight factor, the weight factor proportional to a number of luminance values in the graphics object having values indicating transparency. However, MacInnis teaches an alpha value included in YUV format dependent on keying (chroma or luma) and luma, which is used to blend a top-layer and a bottom-layer (col. 7 lines 38-41, col. 9 lines 37-40, col. 35 lines 11-29, col. 46 lines 45-56, col. 112 line 1, lines 16-23, lines 32-42 and lines 47-53, col. 118 lines 51-67, col. 120 lines 13-14i alpha/alpha value/composite alpha value corresponds to weight factor; alpha value ... depend on ... alpha from chroma keying ... alpha from Y (luma) corresponds to weight factor proportional to luminance value; composite alpha value based on alpha values per pixel

corresponds to summation of alpha values of each pixel in the object; when the Y component ... pixel is typically set to be transparent corresponds to weight factor proportional to a number of luminance values in the graphics object having values indicating transparency; video signal/bottom layer corresponds to digital picture; graphics data/top layer corresponds to graphics object; blend corresponds to overlay; the chroma ... from the luma corresponds overlaying a chrominance value). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to blend the chroma values of two layers separately as taught by MacInnis and use it into the system of Horton because such a blending helps to achieve best visual quality (col. 118 lines 56-57).

24. Regarding claim 24, Horton discloses all of the claimed limitations as stated above, except that Horton does not explicitly teach calculating the weight factor contemporaneously with overlaying. However, MacInnis teaches a blending method to maintain an intermediate alpha value at each stage of the blending operation (col. 47 lines 64-66, col. 48 lines 1-19, col. 49 lines 12-25; blending corresponds to overlaying; intermediate alpha value/alpha value corresponds to weight factor; at each stage ... alpha value is maintained corresponds to calculating the weight factor contemporaneously with overlaying; calculated using a keying function corresponds to calculating the weight factor). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to calculate intermediate alpha values as taught by MacInnis and use it into the system of Horton because intermediate alpha

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value thus calculated and maintained is later used for blending with the layers that are not to be filtered (col. 47 lines 64-67).

25. Regarding claim 25, Horton discloses all of the claimed limitations as stated above, except that Horton does not explicitly teach prior to overlaying the chrominance values, reading the weight factor from the graphics object. However, MacInnis teaches a blending method in which alpha values (weight factor) can be read from the memory as part of the pixel value that corresponds to the upper layers (col. 47 lines 52-54, col. 49 lines 12-67; upper layers may be graphics windows corresponds to graphics object; pixel values of the upper layers, that is read from the memory, contains the alpha values). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to read the alpha value from the pixel of upper layer of graphics object as taught by MacInnis and use it into the system of Horton because before compositing begins, these alpha values are multiplied with chrominance values (U and V values) of a pixel of the current layer before overlaying with the chrominance values of the pixel of the next layer by accounting for the offset nature of the chrominance values (U and V values) (col. 49 lines 32-57).

26. Regarding claim 26, the statements presented above, with respect to claims 22 and 16, are incorporated herein.

27. Regarding claim 3, the statements presented above, with respect to claims 2 and 23, are incorporated herein.

28. Regarding claim 4, Horton discloses all of the claimed limitations as stated above, except that Horton does not explicitly teach calculating the weight factor during

compressing, and storing the weight factor within the digital graphics object. However, MacInnis teaches to convert raw graphics data (original format of graphics object) into YUVa format (compressed format) using YUV 4:2:2 plus an 8-bit alpha value (weight factor) for every pixel (col. 9 lines 24-40, col. 26 lines 3-17; pixel of graphic data containing the alpha value corresponds to storing the weight factor within the graphics object). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to determine the alpha value while converting the raw graphics data into YUVa format as taught by MacInnis and use it into the system of Horton because the graphics converter that converts the graphics data into a YUVa format, providing the data and the alpha values to the graphics blender, has a capacity of performing low pass filtering to filter out high frequency components needed (col. 26 lines 3-17).

29. Regarding claim 7, the statements presented above, with respect to claims 1 and 23, are incorporated herein.

30. Regarding claim 8, the statements presented above, with respect to claims 7 and 24, are incorporated herein.

31. Regarding claim 9, the statements presented above, with respect to claims 7 and 25, are incorporated herein.

32. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horton and MacInnis, and further in view of Chauvel et al. (US 6,369,855 B1; hereinafter referred as Chauvel).

33. Regarding claim 5, the combination of Horton and MacInnis disclose all of the claimed limitations as stated above, except that they do not explicitly teach storing the weight factor in the least significant bits of the chrominance value. However, Chauvel teaches to determine the amount of blending (weight factor) by the LSB of the chrominance components of the pixel of the bitmap (col. 113 lines 36-67, col. 114 lines 43-67; the blend factor corresponds to the LSB of the Cb and Cr values that are stored in the CLUT entry corresponding to that pixel of the bitmap 4:2:2 displays corresponds to storing the weight factor in LSB of the chrominance values). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to calculate the weight factor and store it within the graphics object as taught by Chauvel and use it into the system of Horton and MacInnis because the blending factor determined by the LSB of the chrominance components of the pixel supports color blending on the pixel level for the bitmap displays (col. 114 lines 49-54).

34. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horton and MacInnis, and further in view of Yahav et al. (US Patent No. 6,057,909; hereinafter referred as Yahav).

35. Regarding claim 13, the combination of Horton and MacInnis discloses all of the claimed limitations as stated above, except that they do not explicitly teach that the system comprises of a charge coupled device (CCD) array coupled to the processor, and the processor acquires the digital picture using the CCD array. However, Yahav teaches a CCD array coupled to a video processor (Fig. 10, col. 19 lines 39-44; camera

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110 corresponds to the system; video processor 116 corresponds to the processor; matrix array 112 corresponds to the CCD array; image-responsive video signals corresponds to digital picture; receives image-responsive video signals corresponds to acquiring digital picture). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a CCD array of Yahav into the system of Horton and MacInnis because a CCD camera produces an image of a narrow, linear portion of an object or scene (col. 19 lines 30-32).

36. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horton and MacInnis, and further in view of Callway et al. (Pub. No. US 2003/0027517; hereinafter referred as Callway).

37. Regarding claim 14, Horton teaches a radio receiver coupled to the processor receiving at least one of the digital pictures or the digital graphics object through the transceiver (Fig. 1, col. 3 lines 29-32, col. 4 lines 4-7; television signals corresponds to digital picture; antenna assembly corresponds to radio receiver; satellite receiver with microprocessor corresponds to processor; retransmitted television signals are received corresponds to receiving digital picture).

Although the combination of Horton and MacInnis disclose the claimed limitations as stated above, they do not explicitly teach that the receiver is a wireless transceiver. However, Callway teaches a wireless transceiver coupled to a graphics processing circuit that includes a wireless receiver to receive the transmitted data (Fig. 1, pg. 2 [0016] lines 6-9, pg. 5 [0043] lines 8-13, [0045] lines 13-15; radio frequency based

wireless transceiver corresponds to wireless radio transceiver; graphics processing circuit corresponds to processor). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the wireless radio transceiver of Callway into the system of Horton and MacInnis because a wireless system does not require cabling to provide image data from an image source to a receiving unit (pg. 2 [0015] last four lines).

38. Regarding claim 15, the combination of Horton and MacInnis discloses all of the claimed limitations as stated above, except that they do not explicitly teach that the radio transceiver coupled to the processor transmits the digital picture created by the overlaying of the digital graphics object and the digital picture using the transceiver. However, Callway teaches a wireless transceiver coupled to a graphics processing circuit (Fig. 1, pg. 2 [0016] lines 6-9 and [0022] last 5 lines, pg.3 [0024] lines 1-4, pg. 5 [0043] lines 8-13; radio frequency based wireless transceiver corresponds to wireless radio transceiver; graphics processing circuit corresponds to processor; wireless transmitter corresponds to wireless transceiver; encoding corresponds to compressing; encoded rendered graphics data corresponds to digital graphics object; recompressed decoded video corresponds to digital picture; modulated compressed frames corresponds to digital picture created by the overlaying). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the wireless radio transceiver of Callway into the system of Horton and MacInnis because a wireless system does not require cabling to provide image data from an image source to a receiving unit (pg. 2 [0015] last four lines).

39. Claims 17 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horton and MacInnis.

40. Regarding claim 17, the statements presented above, with respect to claims 11 and 12, are incorporated herein.

41. Regarding claim 27, the statements presented above, with respect to claims 11 and 22, are incorporated herein.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jwalant Amin whose telephone number is 571-272-2455. The examiner can normally be reached on 9:30 a.m. - 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600